

Case study for three typical mining projects

SmartEXEC™ Ventilation-on-Demand



Mine 1: Energy savings (Actual results using VOD)

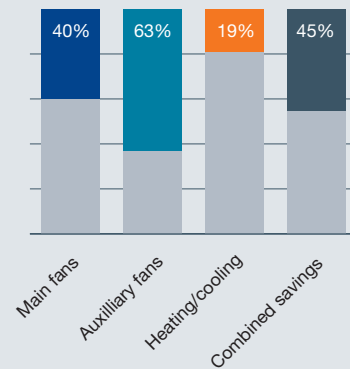
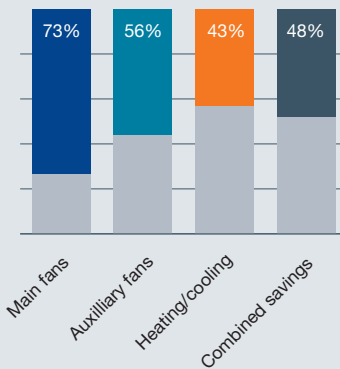
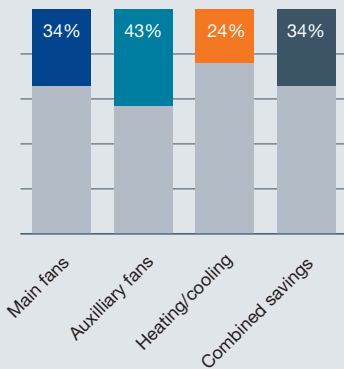
Mining method: Long-hole transverse stoping
Tonnage: 3,400 tpd
Airflow: 1,350,000 CFM
Energy cost: CAD \$0.075/kWh
Life of mine: 9 years
Direct operating savings: CAD \$2.44/t
Net LOM savings including cost of ownership: CAD \$1.63/t
Simple payback: 0.5 years

Mine 2: Energy savings (Actual results using VOD)

Mining method: Long-hole longitudinal & transverse
Tonnage: 3,500 tpd
Airflow: 600,000 CFM
Energy cost: CAD \$0.05/kWh
Life of mine: 9 years
Direct operating savings: CAD \$2.07/t
Net LOM savings including cost of ownership: CAD \$0.77/t
Simple payback: 0.5 years

Mine 3: Energy savings (Actual results using VOD)

Mining method: Long-hole longitudinal retreat
Tonnage: 4,000 tpd
Airflow: 1,700,000 CFM
Energy cost: USD \$0.18/kWh
Life of mine: 9 years
Direct operating savings: USD \$2.09/t
Net LOM savings including cost of ownership: USD \$0.94/t
Simple payback: 2.5 years



Ventilation-on-Demand (VOD) is a technology which has been undergoing continuous evolution since early implementations during a period of rising energy prices in the early 2000s. Howden Simsmart Technologies is now able to release results from case studies of Ventilation-on-Demand systems at three typical underground mines.

The results are based on real data from the operating VOD systems for two of these mines. The third example represents the savings estimated at the feasibility stage to demonstrate improved metrics for a development project.

Achieving cost savings with Ventilation-on-Demand (VOD)

The net energy savings presented by a VOD system including up-front capital costs typically are on the order of 1% of total mining and milling costs on a per-tonne basis. Therefore, considering the average mine's profitability the implementation of VOD can increase net profit by 10% or more.

In addition, if VOD is considered at the feasibility stage or in concert with a major capital development project involving ventilation, there are often opportunities to reduce project capital costs by reducing fan and airway size.

Howden Simsmart Technologies is an integrated manufacturer of hardware and software for mine ventilation control and automation. The SmartEXEC™ product line provides a complete Ventilation-on-Demand solution to help underground mines be more competitive.

For product enquiries or to request a technical visit, please contact:
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